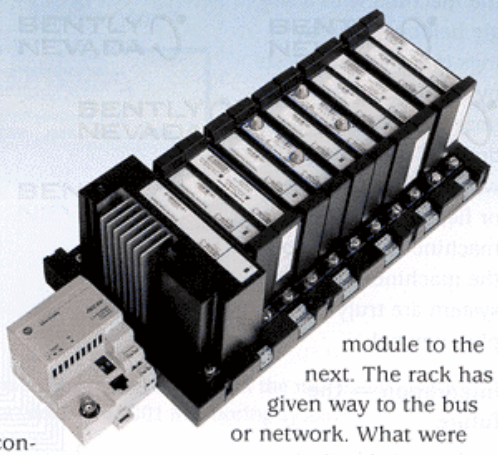
New Product

# FieldMonitor™

## A revolutionary new product that helps OEMs and packagers reduce installation costs by 30% or more



*by Jean Van Den Berg*
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*Bently Nevada Corporation*

### Integration — the need

As a packager of rotating machinery and its associated control systems, you know that the concept of *integrated* machinery control and machinery protection is fundamental to the strategy of virtually every packager and machinery control system OEM in the world. The drive for integration is simple and undeniable: systems that integrate easily reduce your cost of providing control and protection instrumentation to your customers. The market for rotating machinery and its associated controls is a competitive one. We understand this. Our goal is to provide you with the quality and integrity of a Bently Nevada machinery protection system, as specified by so many of your end-user customers, yet allow you to provide such a system with lower total installed costs.

We brought you the first generation of such solutions: our 2201 monitoring system… a family of vibration monitoring modules that plugged into a compatible Allen-Bradley programmable controller chassis. Now, we take a significant step forward with a revolutionary new product we call our **FieldMonitor™** machinery protection system.

### Integration — the past

Until now, tight integration between machinery protection and machinery control systems generally meant plug-in cards that resided in the machinery control system chassis, such as our 2201 System. These plug-in modules represented the prevailing industry view of integration when we introduced the system back in 1992 — integration at the controller chassis using plug-in cards that could co-exist with other types of I/O cards.

**The chassis backplane has now become a distributed I/O bus… Integration at the rack has evolved to integration at the field network.**

### Integration — the present

Today, however, we are seeing the evolution of a new approach to integration… what was once the chassis backplane has now become a distributed I/O bus that is simply wired from one I/O module or controller module to the next. The rack has given way to the bus or network. What were once traces on a printed circuit board backplane are now high speed cable connections running between widely distributed I/O modules and field devices. This highly distributed architecture has allowed the terminal block and intelligent I/O module of yesterday to converge into a single, field-hardened module of today. The module connects directly to field devices and is capable of considerable on-board processing. These modules are suitable for installation right on the machine skid, with the I/O bus acting as a "backbone" to string the I/O together and allow it to communicate with controllers, human machine interfaces, computers, and a host of other devices via one of a variety of industrial networks (DeviceNet™, Profibus, ControlNet™, etc.).

In other words, integration at the rack has evolved to integration at the field network. The physical form factor of the I/O is less important, provided it is suitable for field installation (often, DIN-rail mountable) and can exist as a node on the particular fieldbus used for I/O and controller communications. There are numerous advantages to such an architecture. Perhaps the most significant, however, is the ability to mount instrumentation on the

machine skid and bring all signals to and from the machine with a single fieldbus. The savings in installation costs by eliminating the dozens or even hundreds of individual wires from each sensor or field device on the machine skid back to the machinery control system are truly phenomenal.

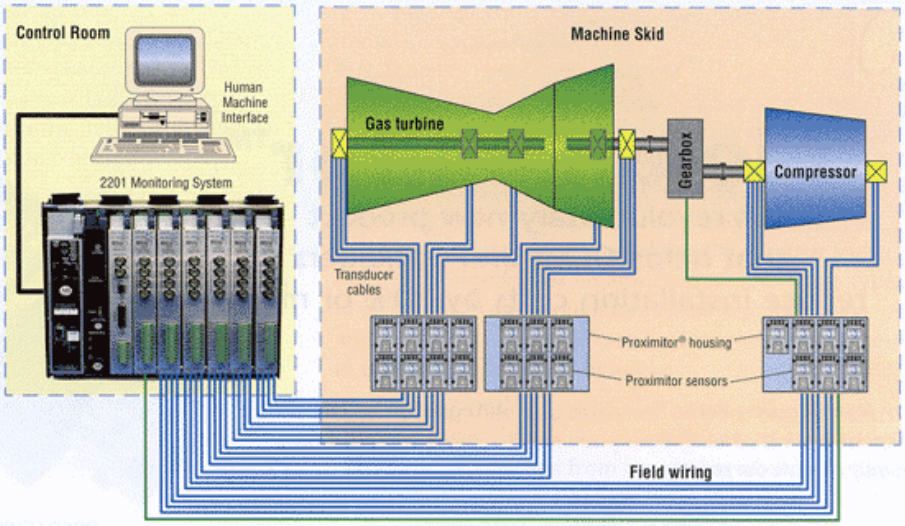


Figure 1. 2201 System using rack-based integration.

## Integration — the future

Now, if only there were a Bently Nevada machinery protection system that could take advantage of this evolving new approach to control and instrumentation architectures.

*There is!* We call it the FieldMonitor Machinery Protection System and there is simply nothing else like it on the market...anywhere. We designed it specifically to meet the needs of machinery packagers and OEMs who are faced with an extremely competitive market and the need to manufacture and package the highest quality machinery and instrumentation at the lowest possible costs. Sure, we could have opted for simpler, lower-quality devices, such as vibration transmitters, but, with the FieldMonitor System, *we addressed the real problem...the high costs of installing instrumentation and running wiring on machine skids.*

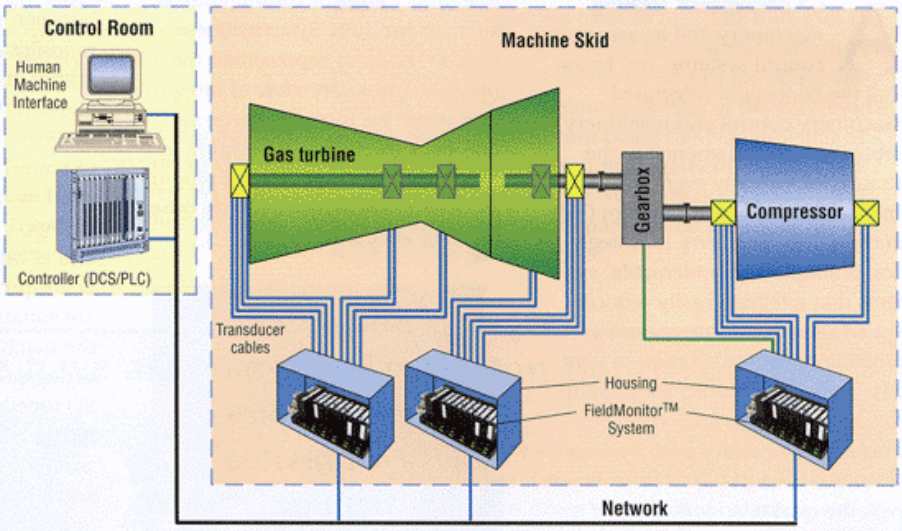


Figure 2. FieldMonitor™ System using network-based integration.

## How does FieldMonitor reduce costs?

1. ***Mounting on the machine skid -***

The FieldMonitor System can be mounted right on the machine skid with a single network connection back to the controller, greatly reducing wiring and other installation costs.

2. ***Proximitor® Sensors integrated into the product -***

No need for separate Proximitor Sensors, housings or cabling. Where you used to mount a Proximitor housing, you can now mount an entire 8-channel monitoring system!

3. ***Less software required -***

By integrating the machinery protection system and the unit control system, you eliminate two separate software products to program and configure the system, and two separate software products to display the data to operators. This greatly reduces the cost to install and set up the system.

4. ***Space savings -***

The FieldMonitor™ System's integrated architecture reduces the

amount of installation space required, as less space is needed for housings, wiring and other hardware.

*5. Common network protocols -*

Because the FieldMonitor supports numerous fieldbus and control network protocols, there's no need to worry about expensive protocol converters or gateway modules. These protocols are native to many of today's control systems. That means the FieldMonitor Machinery Protection System is off-the-shelf compatible with more systems than ever before... far more than if we had tried to build a plug-in module that was only compatible with a limited number of chassis or backplane types. In fact, any protocol compatible with Allen-Bradley's new Flex I/O family of I/O products is compatible with the FieldMonitor System. As new protocols are released within the Allen-Bradley Flex I/O product line, they'll be immediately accessible to the FieldMonitor System.

*6. Scalable System -*

With two channels per module, and groups of modules distributed around the machine skid as nodes on a network, the system is scalable to fit even machines with just a few monitored points.

*7. Reduced Manufacturing and Testing Costs -*

The distributed architecture of FieldMonitor reduces the amount of assembly and testing done at the final manufacturing stages. Plug a cable into the machine skid and all instrumentation is "online." Compare this to the tedious and error-prone process of individually wiring dozens or hundreds of field devices back to I/O modules located hundreds or thousands of feet from the machine. Worse, you do it once in the shop and then all over again in the field. Imagine being able to connect a single cable to the entire machine skid. With the FieldMonitor System, we help make this a reality.

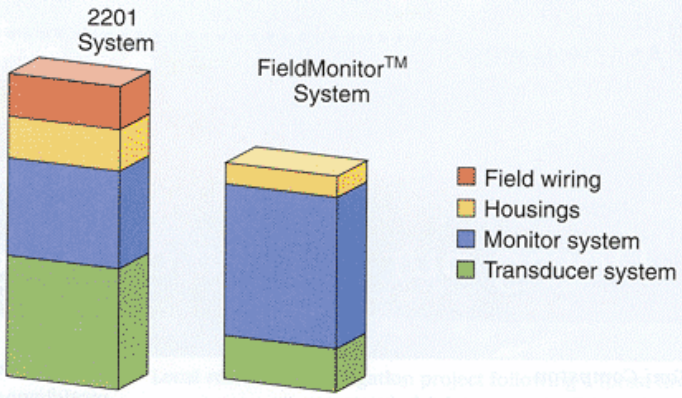


**Figure 3. Dramatic comparison of costs (and savings) of the new FieldMonitor™ Machinery Protection System versus the 2201 Monitoring System.**

## Integration — who

*You can benefit from a FieldMonitor Machinery Protection System if:*

- You currently use a 2201 Monitoring System and want a similar product, but reduced installation costs.
- You use Allen-Bradley's controllers for machine or unit control and need a cost-effective machinery protection system that is highly integrated.
- Your controller supports communications protocols available in Allen-Bradley's Flex I/O family of products and you want a machinery protection system that is tightly integrated and boasts vastly reduced installation costs.

## Machinery management coming soon!

We've never forgotten that we're in the business to help you manage your machines... not just protect them. That means all our protection systems, including the FieldMonitor System, need connectivity to our outstanding family of machinery management software, such as Data Manager® 2000 and Machine Condition Manager™ 2000. It also means we'll be working hard to lower the installed costs for such systems, so they become standard installation on virtually all machinery to which protection systems are applied. Look for this exciting companion to the FieldMonitor platform in 1999. Details will be announced in a future *Orbit* and on our website www.bently.com.

## Start saving... with the FieldMonitor™ System

One look at the new FieldMonitor Machinery Protection System and you'll be as excited as we are. Give your customers the quality and integrity of a Bently Nevada machinery protection and management system and reduce your installation costs at the same time. When compared to even traditional integrated solutions, such as our 2201 System, you can save 30%, or more! It doesn't cost to use Bently Nevada, it pays. To learn more about our new FieldMonitor System, obtain a current list of protocols and start saving money on your machine packages without compromising quality, contact your nearest Bently Nevada sales representative.